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Inaugural Dissertation

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on

Digestion.

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by

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of
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Digestion.

This is a function peculiar to organized bodies, In warm and red blooded animals the nutritive process is performed as in man, and in that respect there exist between them very slight differences. The series of assimilative phenomena commences in the plant by absorption, since it draws from the earth the juices which it is to appropriate to itself. In man the assimilation of alible substances devolves on an apparatus of organs of great complexity, consisting of a long tube extending from the mouth to the anus, and whose length is from five to six times that of the body. The Oesophagus forms the superior portion of this tube and establishes a communication between the mouth and stomach. It is a hollow

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cylinder composed of a muscular tunic and of an internal mucous membrane the use of which is restricted to supplying a fluid to facilitate the progression of the alimentary mass. The Stomach appears as a considerable expansion constituting a kind of bag with two openings, one of which corresponds to the oesophagus, and the other to the first of the small intestines. The Duodenum preserves something of the properties of the stomach. We see in it a curve analogous to that of the stomach and fitted somewhat to retard the passage of the alimentary substances, hence some Anatomists have called it the second stomach.

The Jejunum and Ileon occupy nearly three fourths of the whole length of the digestive canal; they are streighter than the duodenum, and

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do not dilate so readily because the peritoneum which forms their outer covering lies over their whole surface with the exception of the posterior border, at which their vessels and nerves enter. After having described a number of convolutions placed one above the other, the small intestines terminate at the ileo-coecal valve, a fresh narrowing of great interest to the Physiological Physician,

The large intestine is seperated from the inferior portion of the small one, called Ileon, by this valve which is simply a fold of the internal membrane, the free border of which corresponds to the coecum, a kind of enlargement or sac, whence begins the Colon.

The Colon constitutes the major part of the large intestines. Its mucous coat is thicker, than that of the small intestines, partaking of cerebral, spinal and ganglionic nerves of the

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duodenum, stomach, kidnies, bladder and vagina, must be endowed with more sensibility than the floating portion of the small intestine, which only communicates with the brain by the small cords that connect the great sympathetic with that organ.

The digestive canal, properly so called begins at the superior or Cardiac orifice of the stomach, and terminates at the Anus. The parieties of the digestive tube are muscular, a mucus coat lines its inside, and lastly a serous or peritoneal is reflected over it, forming an external covering.

The Mucus tissue exhibits follicles or glands placed between it and the muscular coat, the use of which is to secrete a fluid which passes through this membrane by means of excretory ducts, and lubricates the fouls interior of the digestive canal.

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The muscular coat may be considered a long hollow muscle formed by two layers of fibres, the one set longitudinal and the other circular. The serous is closely united to the mucous membrane by a cellular tissue.

After this hurried view of the digestive organs let us turn to the process itself. The aliments having reached the stomach are there submitted to the process called chymification. The gastric surface being irritated and stimulated by the aliments furnishes them with a fluid from the [illegible] tissue and also [illegible] those of the liver, pancreas and salivary glands. The food [illegible] and [illegible] [illegible] or [illegible] space of [illegible] [illegible] to the [illegible] it [illegible] of the food [illegible] called "chyme". This acid [illegible] of the [illegible]

[illegible] to pass the [illegible] of the stomach [illegible] and [illegible] second digestion.

The food on quitting the stomach [illegible] the duodenum, and there [illegible] [illegible] and effectual those which [illegible] upon it by digestion in the stomach. The [illegible] produced on the parietes of the duodenum [illegible] distended by the chyme is [illegible] to the gall-bladder, by the [illegible] [illegible] [illegible] [illegible]. Its parietes then contract and [illegible] the bile to flow down the bile duct into the "ductus communis choledochus." The cystic and hepatic ducts being [illegible] in the "ductus communis choledochus" [illegible] a change before entering the [illegible] [illegible] the fluid of the pancreas and get [illegible] with it [illegible] to be pancreatic fluid.

The combination [illegible] would pancreatic

and bile passed along the duodenum and passed with the feces, as it was [illegible] the digestive organs. The bile also undergoes changes, its coloring matter and portion passed along with the excrements [illegible] and passed from the alimentary canal along with the contents of the digestive tube. The albumen and other nitrogenous products combined with the chyle, become incorporated with it, are absorbed along with it and passed into the circulation. We may now notice the changes undergone by the food after having undergone this combination. We can distinguish two distinct parts, the one a white milky substance which seems to be fat, the other is a yellowish pulp in which the digestive ferments are so that it is not easy to distinguish

the value of the food.

The alimentary mass has now arrived in the duodenum a certain length of time and may be divided into two parts of chyle and excrementitious matter into the jejunum and ileum. The chyle presents the appearance of a milky fluid resembling the consistence of the mass covering through the intestines and travelled towards the mucous membrane to which it strongly adheres. This membrane absorbs it like a kind of sponge and conducts it to each the chyle vessels or so called lacteals.

The chyle vessels are in great number on the surface of the intestine are formed which are circular and by the mucous membrane and there are at a greater distance from each other than the mucous

are to the termination of the Ileum, cycle
having traversed the long course of the intestines the products of digestion approach
the ileo-cecal valve this final of narrow-
ing retards somewhat its passage, and gives
time for attention to deprive it of the major
part of its chyle which is retained the bundet
is thrown steadily forward here, and when
effected the matter passes into the sacculus
by expulsion. Still it is tolerably fluid
in consequence and the ascending and transverse
portions of the colon, and is much
more dense in the sigmoid flexure and when
accumulated in the rectum to solicit the
act of defecation it presents the appearance
which we see after injec

The fluids absorbed with the chyle
and taken up by the lacteals of the
intestinal tube dilute the nutritive part ex

extracted from the solid aliment, and serve it as a vehicle.

When they have reached the mass of the blood, they increase its quantity, diminish its viscidity, and render it more fluid, going along with it throughout the whole course of the circulation, supplying moisture to all parts of the body they become loaded with molecules detached from them by the vital motion. They conveyed to the urinary organs, they become disengaged from the rest of the fluids, carrying along with them a number of products of every kind which by a longer stay in the animal economy would occasion a manifest disturbance in the exercise of the functions.